



Comparative Analysis of Factor Markets for Agriculture across the Member States

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Agricultural and Rural Capital Markets in the EU Candidate Countries: Croatia, the Former Yugoslav Republic of Macedonia and Turkey

ABSTRACT

This paper analyses agricultural and rural capital factor markets in the three European Union candidate countries: Croatia, the Former Yugoslav Republic (FYR) of Macedonia and Turkey. Aggregate capital market indicators and their dynamics, and factors driving agricultural and rural capital markets are analysed and compared in these countries.

In general, agricultural and rural capital markets show similarities with general capital market developments, but agricultural and rural capital markets are facing specific credit constraints related to agricultural assets and rural fixed asset specificities, which constrain their mortgages and collateral use. Credit market imperfections have limited access to the investment credits necessary for the restructuring of small-scale individual farms. Government transfers are used to differing extents in the candidate countries, but generally tend to increase over time. Remittances and donor funds have also played an important role in agricultural and rural economy investments.

Keywords: Capital market, agriculture and rural areas, European Union, candidate countries.

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Agricultural and Rural Capital Markets in the EU Candidate Countries: Croatia, the FYR of Macedonia and Turkey

Štefan Bojnec*

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1. Introduction

Agricultural and rural capital markets in the three candidate countries, i.e., Croatia, the Former Yugoslav Republic (FYR) of Macedonia and Turkey have been determined by internal domestic banking and financial sector developments and external inflows of workers' remittances and donor funds. Historical developments also play an important role, particularly sharecropping arrangements in Turkey between land owners and tenants.

In this paper we focus on the analysis of key statistical data on capital market developments and provide comparisons between the three candidate countries. In section 2, we present a literature review; in section 3 the main aggregates of capital market developments are analysed. In section 4 determinants of agricultural and rural capital market developments are presented. The final section derives main conclusions and policy implications.

2. Literature review

Different factors can determine the development of agricultural and rural capital markets, and the level of farm credit may depend on various forms of farm ownership, profitability and other farm characteristics. Petrick and Latruffe (2003) investigated credit access and borrowing costs in Poland's agricultural credit market using a hedonic pricing method. Latruffe (2005) investigated the impact of credit market imperfections on farm investment in Poland, where small-scale family farms prevail, and finds that farmers with more tangible assets and with more owned land were less credit constrained than others. Ciaian and Swinnen (2009) analysed credit market imperfections and the associated distribution of policy rents. Smaller rural credit constraints are also indentified for some new EU member states such as Hungary (Bakucs et al., 2009) and Slovenia (Bojnec & Latruffe, 2011). Ciaian and Pokrivcak (2011) estimated the impact of subsidies from the EU's common agricultural policy on farm bank loans and found that subsidies influence farm loans in a non-linear and indirect fashion.

There is almost no available scientific literature on agricultural and rural capital market developments in the three candidate countries. Only a few studies have to some extent analysed different aspects of agriculture, agribusiness and rural capital markets in the candidate countries. Among such studies is one on the importance of family farm inheritance for rural factor markets in Croatia (Žutinić & Grgić, 2010). Moreover, few studies have been conducted on agribusiness in the Turkish economy (Demirbaş, 2007). The FYR of Macedonia has so far been the subject of even fewer studies on agricultural and rural capital markets. Angelova and Bojnec (2011) studied agricultural and rural capital markets in the FYR of Macedonia as a country case study using available national statistics on special

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micro-finance and banking system credits, as well as subsidies for investment into working capital, such as agricultural inputs and fixed capital investments.

3. Comparisons of capital markets developments

Our focus is on the empirical evidence on capital markets in the three candidate countries analysed. Cross-country empirical evidence for agricultural and rural capital markets for the three candidate countries is limited. Separate evidence in international statistics on capital markets for agriculture and for rural economy is not available, while in the available national statistics on agricultural and rural capital markets the evidence in the analysed three candidate countries is also rather sparse. We therefore present some macro-economic evidence on capital markets in the three candidate countries. According to national experts' evidence, there is also no substantial differential in the functioning of the banking sector for agriculture and the rural economy from its general functioning and operation. However, agriculture and the rural economy might face more severe capital market imperfections and credit constraints due to asset and production specificities, which limit access to credit for restructuring and the further development of agriculture and the rural economy. In addition, due to a greater economy of scale in urban areas, there are greater positive externalities for investment in urban than in rural areas. Yet, rural areas also face a lower level of infrastructure development and higher transportation costs, which hinder the competitiveness of the rural economy and make possible alternative investments less attractive.

3.1 Structure of the economy

The structure of the economy is presented as the structure of value added to the gross domestic product (GDP) by agriculture, industry and services. The role of agriculture and industry has declined in each of the three candidate countries. The role of services has increased to more than two-thirds of the economy for Croatia and close to this share for Turkey. In the FYR of Macedonia the role of services in value added to GDP varies in individual years, but at the level above 52% (Table 1). Banking and financial services are included in the service sector, as are similar services for agriculture and rural economy development.

Table 1. Structure of value added to gross domestic product (GDP) in %

	Croatia			FYR of Macedonia			Turkey		
	Agriculture	Industry	Services	Agriculture	Industry	Services	Agriculture	Industry	Services
1990	10.9	35.8	53.4	8.5	44.5	47.0	18.1	32.2	49.8
1993	13.9	36.1	50.0	11.8	35.0	53.1	16.1	31.1	52.8
1996	9.3	30.5	60.2	13.2	29.6	57.2	17.4	31.6	51.0
2001	8.4	28.2	63.4	11.8	32.1	56.1	9.9	30.2	59.8
2005	6.5	28.3	65.2	12.8	29.6	57.6	10.8	28.5	60.7
2007	6.1			11.0			8.7		
2009	6.7	27.1	66.1	11.3	36.3	52.3	9.3	25.8	64.9

Source: World Bank (2011).

3.2 Inflation and interest rates

Each of the three candidate countries experienced very high rates of inflation or even hyperinflation during the 1990s. In recent years, rates of inflation as measured by consumer prices have been reduced substantially, with even deflation in the FYR of Macedonia in 2009 (Table 2). The inflation rate in Croatia is close to the EU-27 level, while the annual inflation rate in Turkey is still above the EU-27 level (Eurostat, 2011).

Table 2. Inflation, consumer prices (annual %)

	Croatia	FYR of Macedonia	Turkey
1995	4.0	16.4	88.1
2000	4.6	6.6	54.9
2005	3.3	0.2	10.1
2009	2.4	-0.3	6.3

Source: World Bank (2011).

Lending interest rates, interest rate spread, and real interest rates in the candidate countries are relatively high (Table 3). The reasons for this could be higher investment risks and probably less competitive banking and financial sectors. On the other hand, the deposit interest rate is the lowest in Croatia and highest in Turkey. Interest rate spread as a differential between lending rate and deposit rate is most recently higher in Croatia than in the FYR of Macedonia. The real interest rate, which is the lending interest rate adjusted for inflation as measured by the GDP deflator, has declined considerably for the FYR of Macedonia, while for Croatia it has increased a slightly. These findings cannot be confirmed for Turkey due to unavailable evidence, which was noted by the World Bank (2011) dataset.

Table 3. Interest rates (%)

	Deposit interest rate			Lending interest rate			Real interest rate		
	Croatia	FYR of Macedonia	Turkey	Croatia	FYR of Macedonia	Turkey	Croatia	FYR of Macedonia	Turkey
1995	5.5	24.1	76.0	20.2	45.9		-2.9	24.6	
2000	3.7	11.2	47.2	12.1	18.9		7.2	9.9	
2005	1.7	5.2	20.4	11.2	12.1		7.6	8.0	
2009	2.8 ^a	5.9 ^a	22.9	11.6	10.1		8.0	7.1	

^a 2008 data.

Source: World Bank (2011).

Table 4. Domestic credit (% of GDP)

	Domestic credit provided by banking sector			Domestic credit to private sector		
	Croatia	FYR of Macedonia	Turkey	Croatia	FYR of Macedonia	Turkey
1995	41.5	25.7	29.1	26.5	23.1	19.5
2000	40.8	14.4	39.3	32.3	17.8	18.4
2005	64.2	20.0	46.9	53.0	25.1	22.8
2008	75.1	42.7	52.5	64.9	43.8	32.6

Source: World Bank (2011).

In Croatia, a percentage of domestic credit provided by the banking sector is around three quarters of GDP and the majority of domestic credits are allocated to the private sector (Table 4). The findings for the FYR of Macedonia and for Turkey are mixed. Both the percentages of domestic credit provided by the banking sector and domestic credit allocated to the private sector in GDP have increased. In Turkey, domestic credits provided by the banking sector are more than 50% of GDP, but domestic credits allocated to the private sector are still around one-third of GDP. The empirical evidence clearly indicates the increasing role of the banking sector and their domestic credits provided to the private sector in the three candidate countries.

Subsidies and other transfers as a percentage of expenditure have increased over time (Table 5). This macro-economic evidence explores variations by individual years, and particularly during the more recent years of economic and financial instabilities and recession. The percentage of subsidies and other transfers of government expenditure is the highest for Croatia, but a rapid increase is also seen for the FYR of Macedonia.

Table 5. Subsidies and other transfers (% of expense)

	Croatia	FYR of Macedonia	Turkey
1995	31.7		
2000	43.3		
2005	54.1	39.3	40.0 ^a
2008	53.6	49.1	41.1

^a 2006 data.

Source: World Bank (2011).

3.3 Bank performance

In general, before the economic and financial recession that followed 2008, bank performance in the three candidate countries was rather favourable. The percentage of non-performing bank loans to total gross loans declined in each of the candidate countries over the last decade (Table 6). A percentage of the bank capital to assets ratio oscillated in individual years, but seemed to increase slightly over time. A percentage of bank liquid reserves to bank assets ratio indicates different patterns between the three candidate countries. For the FYR of Macedonia it tends to increase over time from a relatively low initial level. This increasing pattern is also seen for Croatia, albeit at a higher relative level, with a slight decline more recently. However, it remains at a slightly higher level than in the other two candidate countries. During the last decade, Turkey increased its percentage of bank liquid reserves to bank assets ratio, which has also been associated with relatively high rates of economic growth in the country.

Table 6. Bank performance

	Non-performing bank loans to total gross loans (%)			Bank capital to assets ratio (%)			Bank liquid reserves to bank assets ratio (%)		
	Croatia	FYR of Macedonia	Turkey	Croatia	FYR of Macedonia	Turkey	Croatia	FYR of Macedonia	Turkey
1970									15.6
1980									19.7
1993							1.9	0.7	8.0
1996							7.3	1.8	6.0
2000	9.5		9.2	11.9		6.1	10.7	7.9	4.2
2005	6.2	15.0	4.8	9.0		12.9	19.6	9.8	10.5
2008	4.9	6.8	3.6	13.5		11.7	12.6	11.9	10.9

Source: World Bank (2011).

3.4 Workers' remittances

The World Bank (2011) data also indicates a considerable inflow of workers' remittances in each of the three candidate countries analysed. The outflow of labour from rural areas to countries abroad, particularly to Germany and some other Western European countries, mainly took place during the 1960s and the 1970s. In return, a significant part of these workers' remittances flow back to rural areas in the three candidate countries.

The migration of workers abroad, particularly to Western Europe, has been significant in each of the three candidate countries. Consequently, workers' remittances have made up an important share of GDP. In the mid-1970s, workers' remittances in Turkey represented more than 4% of GDP (Table 7). Later, for Turkey there was a decline in the percentage of remittances in GDP, for three main reasons. First, after the intensive outflow of labour during the 1960s and in the early 1970s, Western European countries imposed limitations on new employment from abroad. Second, there have been switches in migration flows among emigrated workers from temporary to permanent migration with family members, and thus fewer remittances were sent back to the country of origin. Third, Turkey has experienced faster growth of domestic GDP than inflows in workers' remittances; particularly fast growth rates have been recorded in recent years.

The outflow of labour to Western Europe during the second half of 1960s and the beginning of 1970s was also important for Croatia and the FYR of Macedonia, but accurate data on the inflow of workers' remittances are not available as both these countries were at that time part of the Former Socialist Federal Republic of Yugoslavia (FSFRY). Since the country's independence from the former Yugoslavia, workers' remittances as a percentage of GDP have increased for the FYR of Macedonia, but declined slightly for Croatia over the last decade. Again, these patterns in workers' remittance flows as a percentage of GDP indicates the intensity of workers' flows abroad, with the related backward inflow of workers' remittances as well as a development in domestic GDP. As can be seen, the FYR of Macedonia is far more dependent on workers' remittance inflows than the more economically developed Croatia. It is worth mentioning that several outflow labour migrations were from rural areas and thus inflows of workers' remittances largely go back to rural areas. These inflows of workers' remittances are important for the rural population's well-being as well as for the mitigation of rural poverty. To some extent, they are also important for investment activities in agricultural households and in rural areas.

Table 7. Workers' remittances (% of GDP)

	Croatia	FYR of Macedonia	Turkey
1974			4.01
1993	2.11		1.62
1996	2.86	1.53	1.95
2001	3.27	2.14	1.42
2005	2.75	3.90	0.18
2009	2.34	4.13	0.16

Source: World Bank (2011).

3.5 Donors' funds

Donations from different funds have been granted to each of the three candidate countries. Among these donations, development agencies also support agricultural and farm sector restructuring and modernisation in the three candidate countries.

Inflows of donors' funds is presented on the basis of aggregated evidence of the net official development assistance (ODA), which consists of loan disbursements made on concessional terms (net of repayments of principal) and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries to promote economic development and welfare in countries and territories in the DAC list of ODA recipients. It includes loans with a grant element of at least 25% (calculated at a 10% rate of discount). The ODA inflows to the three candidate countries in Table 8 are presented by two indicators. First, net ODA received as a percentage of gross capital formation. Second, net ODA received as a percentage of central government expense.

Table 8. Net official development assistance

	% of gross capital formation			% of central government expense		
	Croatia	FYR of Macedonia	Turkey	Croatia	FYR of Macedonia	Turkey
1960			9.8			
1970			7.0			
1980			7.6			
1992	0.0	0.8 ^a	0.7	0.0		
1996	2.9	11.9	0.6	1.6		
2001	2.6	37.7	0.6	1.4		
2005	1.1	18.8	0.4	0.8	12.6	0.5 ^b
2008	1.9	8.4	1.3	1.7	7.4	1.2

^a 1993 data. ^b 2006 data.

Source: World Bank (2011).

At different stages of economic development the three candidate countries received development assistance (Table 8). During the 1960s, 70s and 80s development assistance was important for Turkey, but in more recent years Turkey has also become important as a driver of economic development and other assistance abroad. For Croatia, the inflows of development assistance increased during the first half of the 1990s, after the end of the war in Croatia, which followed after the announced declaration of independence from the FSFRY. Development assistance has recovered again with the Croatian economy adjustments towards EU membership. Development assistance has been particularly important for the FYR of Macedonia. For example, at the beginning of the millennium, net ODA represented more than one-third of gross capital formation in the country. During the last decade it has declined, but has remained important for both gross capital formation and central government expenditure. Development assistance has been particularly targeted towards agricultural and rural areas (Angelova & Bojnec, 2011).

4. Determinants of agricultural and rural capital market developments

Lagerkvist et al. (2011) conducted a written questionnaire survey on the institutional framework of the market for agricultural credit. However, most requested specific data on rural capital markets is difficult to obtain for the three candidate countries.

4.1 Institutional framework for agricultural and rural capital markets

For Croatia, commercial banks are not giving out data on interest rates for business credits. In addition, interest rates for credits vary according to individual investment projects. Yet, in Croatia, there is no agricultural bank present to provide specialised credits for agriculture. There is in fact only one Croatian-owned and operated bank; all other banks in the country are foreign-owned and operated. They also provide credits for agriculture and rural development under similar, market-driven interest rates as for the rest of the Croatian economy. Evidence on credits for small individual farms is not known, while the largest agricultural concern took a credit at an interest rate of 10.5%. This interest rate is at a level close to reported macro-economic lending interest rates for Croatia, in Table 3.

In Turkey there are both domestic and foreign-owned and operated banks, which provide commercial credits to agriculture and other rural economy activities. There is no easily available evidence on the total value of credits and their use by activities in agriculture and in the rural economy. In addition, a special agricultural bank provides credits for agriculture and rural areas under conditions that are slightly more favourable than from commercial banks.

Unlike in Croatia and the FYR of Macedonia, sharecropping in Turkey plays a significant role in agricultural investment activities and businesses between landowners and tenants and is also important for the agricultural and rural credit and loans markets.

For the FYR of Macedonia, there is no precise information about credit volume per asset category in agriculture either. Among the main providers of credit to farm primary production operation are commercial banks and sellers of inputs supplies. More specifically, 40% of credit to agriculture is provided by commercial banks for different categories of investments in land, buildings, equipment and machinery, and inventory assets; 30% is provided by sellers of input supplies such as machinery, either by credits or leasing, sellers of seeds and fertilizers, and other input for primary agricultural production. The remaining 30% comes from the government in the form of governmental credit institutes, but not subsidies. Finally, in the FYR of Macedonia, there are no mortgage institutions or farmers' cooperative banks. Among the governmental credit institutions to provide credits to agricultural operations is an important government agency that provides subsidised government loans to farmers, private banks that supply government subsidised loans, market funded and private banks that transfer subsidised government loans and receive commission fees from the government.

For the FYR of Macedonia, the number of creditors, their lending volume and share in the total volume of credits to agricultural operations has increased over the last decade among the following institutions: commercial banks, government credit institutes, and sellers of input supplies for primary agricultural production such as seeds, fertilizers and other chemicals for agricultural production. These are active providers of credit for primary agricultural production. On the other hand, during the last decade there are no mortgage institutes, or farmers' cooperative banks or any other informal banking or financial institutes for primary agricultural production.

4.2 Authorised agricultural and rural credit market institutions

In the FYR of Macedonia, as in the two other candidate countries analysed, there are no authorised institutions and/or authorities that regulate or supervise the agricultural credit market. However, the Ministry of Agriculture, Forestry and Water Economy (MAFWE) in the FYR of Macedonia monitors interest rates and other subsidies given to farmers (Angelova & Bojnec, 2011). In addition, the Agency for Financial Support in Agriculture and Rural Development in the FYR of Macedonia is authorised to implement the financing of agricultural and rural development activities from the government budget, and is particularly responsible for the distribution of the Instrument for Pre-Accession Assistance (IPA) of EU funds.

4.3 Reasons for credit constraints in agriculture

Among the reasons often given for the rejection of farmers' investment proposals in the FYR of Macedonia are lack of appropriate farming or management experience, insufficient farm business income, poor credit history of the applicant, lack of collateral and an insufficient business plan. So far credit to agriculture was largely allocated to agricultural enterprises, but less often to individual family farms, which predominate among farming structures. Individual family farms face credit constraints due to the unsettled legal ownership of assets and thus collateral problems (Angelova & Bojnec, 2011). Sometimes the reasons given for the rejection of an agricultural credit application are lack of appropriate farming or management education, particularly by individual family farms, insufficient household income and a weak previous relationship with the creditor.

In none of the candidate countries is there a functioning mezzanine credit market that would cover the potential gap between borrowers' equity and the lending amount agreed by the primary lender.

4.4 Credit project risk assessment

The method of carrying out risk assessment related to a credit evaluation of a farming investment proposal varies between the candidate countries. For example, in the FYR of Macedonia, estimated farm business profit (cash flow) makes up around 55% of the weight of risk assessment, followed by the available business collateral (30%) in a typical credit evaluation of a farming investment proposal in new buildings and equipment or for some type of livestock production. To a lesser extent some other characteristics of project proposals are also important, such as available household income of the applicant (5%), the available non-farm assets for use as collateral (5%), the credit history of the applicant and his family (2%), appropriate farming or management education (1%), appropriate farming or management experience (1%), and the extent of any previous relationship with the creditor (1%). When a farmer applies for a loan to finance an investment, more weight is given to estimated economic outcome than to the personal relationship between the bank and the loan applicant.

4.5 Government support

Different means of government support are available in the agricultural credit market in the candidate countries. For example, in the FYR of Macedonia, principal loans from government are the most important (50% of government support for investment), followed by investment allowances as a part of the investment cost, which is recovered as a subsidy (40%), and payback guarantees (10%).

4.6 Factors to obtain credit or extend loans

In the FYR of Macedonia, the possibilities for a farmer to obtain credit for a larger farm investment are somewhat greater than for smaller rural firms. So far credit to agriculture has been largely allocated to a small number of agricultural enterprises, while a large number of individual family farms have been excluded from agricultural and rural capital market due to the credit constraints they have faced (Angelova & Bojnec, 2011).

The most relevant factor for extending an already existing loan regarding the importance of available collateral versus the expected cash-flow generation from the loan for the FYR of Macedonia is more cash flow than asset-based lending, while only asset-based lending seems to be the least important, if there is enough collateral wealth that can be easily liquidated in case of default.

5. Conclusions and policy implications

Our focus has been on agricultural and rural capital markets in the three EU candidate countries: Croatia, the FYR of Macedonia and Turkey. We have analysed aggregate capital market indicators and factors driving agricultural and rural capital markets. While there are some specific agricultural and rural capital market policies, in general agricultural and rural capital markets show similarities with general capital market developments in each of the three candidate countries. In addition, Turkey has experienced an historical evolution in sharecropping arrangements, which are partly explained by different regional and historical-cultural traditions in this large country.

Each of the three candidate countries has experienced a considerable outflow of labour from agricultural and rural areas, particularly to Western European countries, since the 1960s. The backward inflows of workers' remittances and pensions from abroad to rural areas seem still to be important for agricultural and rural economy investment and welfare in each of the candidate countries considered.

Each of the candidate countries has also gained from donors' funds, but at different times. Donors' funds have assisted in agriculture and in rural areas by a greater use of capital equipment and more capital-intensive technologies, as well as in adjustments to

international agro-food and other development standards, EU policies and practices. Agricultural and rural development policies and environmental regulation are areas where national policies and pre-accession support can help to promote farm, agricultural and rural development.

In the three countries studied these policies are likely to be short-lived and weak, both in analytical power, particularly economics, and implementation capacity. There is a need to promote effective linkages to markets and access to public goods and services, particularly for prevailing small-scale individual farms. Local organisations and producers' associations can help to manage problems of moral hazard and adverse selection because of their informational advantages. They can also overcome the economy-of-scale problems of small, individual, family farms that prevail in each of the three candidate countries. They can also link production more efficiently in local areas with greater access to national and international markets, and diversified sources of risk in terms of profitability and the investment climate.

On the other hand, agricultural rural development is needed to attack and reduce heterogeneous types of rural poverty, which have been mitigated by government subsidies and social transfers and by inflows of workers' remittances from abroad. However, it is necessary to assure access to capital and other assets for small-scale individual family farms and use these assets for sustainable growth in large segments of the rural population.

Finally, it is important to develop rural demand-led project-making and project-designing capacities. This has been identified as an important credit constraint for small-scale individual family farms in the FYR of Macedonia, but is probably also important in the two other candidate countries. Several rural development policies and projects in the EU are based on an effective participatory policy and project-making process that can continuously address the need for design, reforms and the implementation of policy and projects, which are also supported by EU structural cohesion and rural development policies.

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The Factor Markets project in a nutshell

Title	Comparative Analysis of Factor Markets for Agriculture across the Member States
Funding scheme	Collaborative Project (CP) / Small or medium scale focused research project
Coordinator	CEPS, Prof. Johan F.M. Swinnen
Duration	01/09/2010 – 31/08/2013 (36 months)
Short description	<p>Well functioning factor markets are a crucial condition for the competitiveness and growth of agriculture and for rural development. At the same time, the functioning of the factor markets themselves are influenced by changes in agriculture and the rural economy, and in EU policies. Member state regulations and institutions affecting land, labour, and capital markets may cause important heterogeneity in the factor markets, which may have important effects on the functioning of the factor markets and on the interactions between factor markets and EU policies.</p> <p>The general objective of the FACTOR MARKETS project is to analyse the functioning of factor markets for agriculture in the EU-27, including the Candidate Countries. The FACTOR MARKETS project will compare the different markets, their institutional framework and their impact on agricultural development and structural change, as well as their impact on rural economies, for the Member States, Candidate Countries and the EU as a whole. The FACTOR MARKETS project will focus on capital, labour and land markets. The results of this study will contribute to a better understanding of the fundamental economic factors affecting EU agriculture, thus allowing better targeting of policies to improve the competitiveness of the sector.</p>
Contact e-mail	info@factormarkets.eu
Website	www.factormarkets.eu
Partners	17 (13 countries)
EU funding	1,979,023 €
EC Scientific officer	Dr. Hans-Jörg Lutzeyer

